

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method for manufacturing molten iron, comprising:
producing reducing material of mixed hot fine direct reduced iron and calcined
additives, the reducing material being produced from multiple fluidized beds;
charging the reducing material to at least one pair of roller presses;
roll pressing the reducing material through the at least one pair of roller presses to
produce continuous compacted material having lumped portions adjacent to each other and
concave grooves formed between the lumped portions on pressed surfaces;
crushing the compacted material to have irregular shapes;
subsequently charging the crushed compacted material with irregular shapes to a
coal packed bed; and
supplying oxygen to the coal packed bed to manufacture molten iron,
wherein the lumped portions are continuously formed on the pressed surfaces along
an axial direction of the at least one pair of roller presses,
wherein the pressed surfaces comprise first and second pressed surfaces opposing
each other and the lumped portions comprise first and second lumped portions formed on
the first and second surfaces, respectively, and,
wherein, when viewed from a direction perpendicular to a plane centered between
the first pressed surface and the second pressed surface:
 - (i) the first and second lumped portions partially overlap each other; and
 - (ii) the concave grooves are unaligned on the opposing first and second pressed
surfaces.
2. (Currently Amended) The method of claim 1, further comprising charging the
reducing material in two slanted directions at acute angles to a direction perpendicular to the
at least one pair of roller presses.
3. (Previously Presented) The method of claim 1, wherein the compacted
material has a thickness of 3 mm to 30 mm and a density of 3.5 tons/m³ to 4.2 tons/m³.
4. (Previously Presented) The method of claim 1, wherein the crushed
compacted material has an average grain size of 50 mm or less.
5. (Canceled)

6. (Previously Presented) The method of claim 1, further comprising performing a second crushing process of the crushed compacted material in the case where an average grain size of the crushed compacted material exceeds 30 mm.

7. (Previously Presented) The method of claim 1, further comprising supplying nitrogen in each step.

8. (Previously Presented) The method of claim 1, further comprising:
collecting dust particles generated in each step;
wet scrubbing the collected dust particles;
removing moisture from the wet scrubbed dust particles; and
discharging the dust particles from which moisture has been removed to the outside.

9. (Previously Presented) A method for manufacturing molten iron, comprising:
producing hot fine direct reduced iron from fluidized beds;
charging the fine direct reduced iron to at least one pair of roller presses;
roll pressing the fine direct reduced iron through the at least one pair of roller presses to produce continuous compacted material having lumped portions adjacent to each other and concave grooves formed between the lumped portions on pressed surfaces;
crushing the compacted material to have irregular shapes;
subsequently charging the crushed compacted material with irregular shapes to a coal packed bed; and
supplying oxygen to the coal packed bed to manufacture molten iron,
wherein the lumped portions are continuously formed on the pressed surfaces along an axial direction of the at least one pair of roller presses,
wherein the pressed surfaces comprise first and second pressed surfaces opposing each other and the lumped portions comprise first and second surfaces formed on the first and second surfaces, respectively, and
wherein, when viewed from a direction perpendicular to a plane centered between the first pressed surface and the second pressed surface:
(i) the first and second lumped portions partially overlap each other; and
(ii) the concave grooves are unaligned on the opposing first and second pressed surfaces.

10. (Previously Presented) The method of claim 9, wherein a ratio of an arc length between corresponding point of the first pressed surface corresponding to a groove of the second pressed surface and at least one groove of the adjacent grooves of the first pressed surface, to an arc length between adjacent grooves of the first pressed surface is between 0.3 and 0.5.

11. (Previously Presented) The method of claim 9, further comprising mixing hot calcined additives from multiple fluidized beds with the fine direct reduced iron and performing each step.

12. (Previously Presented) The method of claim 11, wherein the calcined additives are 3 wt% to 20 wt% of the total compacted material.

13. (Currently Amended) The method of claim 11, comprising roll pressing the fine direct molten iron at a temperature of 400 °C to 800 °C by the at least one pair of roller presses.

14. (Currently Amended) The method of claim 11, comprising roll pressing the fine direct molten iron at 140 bar to 250 bar by the at least one pair of roller presses.

15. (Previously Presented) The method of claim 11, wherein the continuous compacted material has a thickness of 3 mm to 30 mm and a density of 3.5 tons/m³ to 4.2 tons/m³.

16. (Previously Presented) The method of claim 11, wherein the crushed compacted material has an average grain size of 50 mm or less.

17. (Previously Presented) The method of claim 16, wherein the average grain size of the crushed compacted material is 30 mm or less.

18. (Previously Presented) The method of claim 11, wherein the crushed compacted material with a grain size of 1 mm to 30 mm comprises 25 wt% to 100 wt% of the total.

19– 30. (Canceled)